REMARKS

The examiner has objected to the drawings for failing to comply with 37 CFR 1.84(p)(5) because they do not include item number 113. Applicant proposes replacing the original sheet 14 (FIG. 15) of the drawings with the attached replacement sheet 14, which differs from the original sheet 14 showing the registry 113. Applicant did not show the changes to sheet 14 in red ink because the attached copy of sheet 14 is being transmitted via fax.

The examiner has rejected claims 19, 20, 44, 45, and 52 under 35 U.S.C. 112, second paragraph, as being indefinite. Applicant has canceled these claims. Applicant believes new claims 53 - 74 comply with the requirements of 35 U.S.C. 112, second paragraph.

Claims 1, 2, 6 - 9, 12, 14 - 18, 21 - 25, 26, 27, 31 - 34, 39 - 43, and 46-52 stand rejected under 35 U.S.C. 102(e) as being anticipated by McCloghrie et al (U.S. Patent No. 6,286,052, hereafter referred to as McCloghrie). Claims 3 - 5, 11, 19 - 20, 28 - 30, 36, 44, and 45 stand rejected under 35 U.S.C 103(a) as being unpatentable over McCloghrie in view of Sistanizadeh et al (U.S. Patent No. 6,681,232, hereafter referred to as Sistanizadeh). Claims 10 and 35 stand rejected under 35 U.S.C. 103(a) as being unpatentable over McCloghrie in view of Kunzinger (U.S. Patent No. 6,011,777). Applicant notes that the examiner has not rejected dependent claim 37 over the prior art. Applicant has canceled independent claims 1 and 26 as well as their respective dependent claims 2 - 25 and 27 - 52 and has submitted new claims 53 - 100. Applicant believes new claims 53 - 100 clearly distinguish the present invention from the prior art cited in the examiner's rejections of claims 1 - 52.

The present invention, as defined by new claim 53, relates to a method of managing network traffic (designated 16 in the embodiment shown in FIG. 1) being routed through a network connection device (designated 12). The network traffic (16) is composed of at least first and second traffic flows and each traffic flow is composed of at least one data packet (in the embodiment shown in FIG. 1, the first traffic flow is composed of packets A and the second traffic flow is composed of packets B). The method comprises receiving and storing at least a first criterion (18) at the network connection device (12), receiving and storing at least a second criterion (18) at the network connection device, and receiving and storing first and second instructions (POLICY 1 and POLICY 2 respectively, FIG. 4) at the network connection device. The network connection device (12) uses the first criterion (18) to identify the traffic flow to which a data packet belongs. The network connection device (12) uses the second criterion (18) to classify a traffic flow as belonging to one of at least first and second traffic flow classes. The first and second instructions are used for processing a data packet and are associated with the

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first and second flow classes respectively. The method also comprises receiving a first data packet (29) that belongs to the first traffic flow at the network connection device, determining that the first data packet belongs to the first traffic flow, determining the traffic flow class to which the first traffic flow belongs, and processing the data packet according to the instructions associated with the flow class to which the first traffic flow belongs.

McCloghrie describes a system within a computer network 200 that identifies specific traffic flows originating from a given network entity 222 and requests and applies appropriate policy rules or service treatments to the traffic flows. The network entity 222 includes a flow declaration component 226 that communicates with one or more application programs 224 executing on the entity 222. The flow declaration component 226 includes a message generator 230 and an associated memory 232 for storing one or more traffic flow data structures 234. For a given traffic flow, the application program 224 issues one or more calls, as shown by reference numerals 410 - 416d in FIG. 4A, to the flow declaration component 226 and provides it with information identifying the traffic flows. The flow declaration component 226 then opens a flow management session, as indicated by reference numeral 420 in FIG. 4B, with a local policy enforcer 210. The local policy enforcer 210 obtains policy rules or service treatments for the identified flow from a policy server 216, as indicated by reference numeral 430 in FIG. 4B, and applies those rules or treatments to the specific traffic flows from the network entity 222.

There are several significant distinctions between the present invention, as defined by claim 53, and the system described in McCloghrie. In the system of McCloghrie, no component receives any equivalent of a criterion for distinguishing between classes of traffic flows. Applicant notes that the packet/frame classifier 314, shown in McCloghrie's FIG. 3, is not described as having the functionality of grouping multiple traffic flows into a more general category of similar traffic flows. Further, whenever the application program 224 initiates a new traffic flow, local policy enforcer 210 will only know the appropriate policy rule or service treatment for that flow after multiple exchanges of information between itself, the flow declaration component 226 and the policy server 216. These exchanges of information delay the transmission of the new traffic flow and add overhead to the network traffic. In the present invention as defined by claim 53, the network connection device receives and stores information for classifying and processing multiple classes of traffic flows as well as criteria for distinguishing a data packet of one traffic flow class from another. Therefore, upon receiving a packet of a new traffic flow, the network

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connection device will classify the new traffic flow as belonging to a particular flow and flow class and apply the appropriate policy without the need to consume time and network resources retrieving information from an outside source.

In view of the foregoing, applicant submits that McCloghrie does not disclose all elements of the invention as defined by claim 53. Specifically, McCloghrie does not disclose a method of managing network traffic including the step of receiving at least a second criterion at a network connection device for classifying a traffic flow as belonging to one of at least first and second traffic flow classes, nor the step of storing first and second criteria and the first and second instructions on a network connection device. Applicant therefore submits that claim 53 is patentable over McCloghrie. It follows that dependent claims 54 - 76 are also patentable over McCloghrie.

The invention as defined by dependent claim 54 adds the limitation of the network connection device receiving first and second criteria and the first and second instructions in a pre-compiled file. As described above, the local policy enforcer 210 of McCloghrie receives a single policy applicable to a single flow from the policy server 216 only in response to a specific request from the local policy enforcer. McCloghrie does not describe the local policy enforcer receiving a file containing multiple policies for multiple flows or receiving a policy for a flow without specifically requesting a policy decision from the policy server. Therefore, applicant submits that McCloghrie does not disclose all elements of the invention as defined by claim 54 and applicant submits that claim 54 is patentable over McCloghrie independently of claim 53.

The invention as defined by dependent claim 75 is similar in scope to the invention defined by claim 53, but includes the step of instantiating a virtual machine on the network connection device. The virtual machine is limited to using a sub-set of the instruction set of the network connection device. The system of McCloghrie does not describe any instantiation of a virtual machine or the use of a limited instruction set. Therefore, applicant submits that McCloghrie does not disclose all elements of the invention as defined by claim 75 and applicant submits that claim 75 is patentable over McCloghrie independently of claim 53.
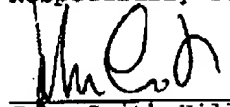
The invention as defined by claim 77 relates to a method of managing a network connection device. Applicant submits that the above arguments relating to the invention as defined by claim 53 are equally applicable to claim 77. Applicant therefore submits that claim 77 is patentable over McCloghrie. It follows that dependent claims 78 - 100 are also patentable over McCloghrie.

Similarly to claim 54, the invention as defined by dependent claim 78 adds the limitation of the network connection device receiving first and

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second criteria and the first and second instructions in a pre-compiled file and, for the reasons discussed above in relation to claim 54, applicant submits that McCloghrie does not disclose all elements of the invention as defined by claim 78. Therefore, applicant submits that claim 78 is patentable over McCloghrie independently of claim 77.

The invention as defined by dependent claim 99 is similar in scope to the invention defined by claim 77, but includes the step of instantiating a virtual machine on the network connection device. The virtual machine is limited to using a sub-set of the instruction set of the network connection device. The system of McCloghrie does not describe any instantiation of a virtual machine or the use of a limited instruction set. Therefore, applicant submits that McCloghrie does not disclose all elements of the invention as defined by claim 99 and applicant submits that claim 99 is patentable over McCloghrie independently of claim 77.

Respectfully submitted,

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John Smith-Hill

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